

## Impact of Deep Breathing and Massage on Pain Reduction in Herniotomy Patients

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### ABSTRACT

Herniotomy is a surgery performed to free the hernia sac up to the neck, so that adhesions do not occur and then it is repositioned. The hernia sac is stitched, tied as high as possible and then cut. The patient will always experience pain after surgery on day 1. Deep breathing and massage relaxation techniques are one of the non-pharmacological pain management methods to reduce pain. This research aims to determine the effect of deep breathing relaxation techniques and massage on reducing the pain scale in herniotomy patients. This research uses a literature review by searching articles on the Google Scholar electronic database. Several articles were found in the Google Scholar search database, but only 8 articles met all the inclusion criteria and were reviewed. Results: pain in post-operative patients often occurs, there are many non-pharmacological techniques to treat pain, one of which is the deep breathing technique. Conclusion: The conclusion of the 8 journals studied is that deep breathing relaxation therapy is very influential in reducing pain intensity in post-operative patients if done correctly and continuously.

**Keywords:** Deep Breathing Relaxation, Massage, Pain Scale, Post Herniotomy

### Background

Hernia comes from the Latin word, *herniae*, which means the protrusion of the contents of a cavity through thin, weak connective tissue in the wall of the cavity. The weak cavity walls form a pocket with a ring-shaped door. This disorder often occurs in the stomach with the contents coming out in the form of part of the intestine. An inguinal hernia is a hernia that occurs in the groin. This type is the most common and is known as descending berok or burut (1).

According to the World Health Organization (WHO), hernia sufferers increase every year. Data obtained in the 2007 decade saw the United States ranked in the top five with around 700,000 hernia operations performed each year. The incidence of inguinal hernias in America may be due to congenital anomalies or due to acquired causes. Various causal factors play a role in the formation of a hernia entrance in the internal annulus that is wide enough so that the hernia contents can pass through.

Hernia ranks 8th with 18,145 cases, 273 of which died. Of the total, 15,051 cases occurred in men and 3,094 cases occurred in women. In Indonesia for the period January 2010–February 2011, there were 1,243 people who experienced inguinal hernias, including 230 people (5.59) (2).

Data in Central Java states that the incidence of hernias is estimated at more than 500 hernia sufferers. The increase in the incidence of lateral inguinal hernias in Indonesia, especially in Central Java, could be due to increasingly developing science and technology. This requires humans to try to fulfill their needs with extra effort, of course this affects lifestyle

and health which can cause heavy body work which can cause fatigue and weakness in various body organs (3).

For hernias, surgical treatment is carried out, including herniotomy and hernioplasty. Herniotomy is a surgery performed to free the hernia sac up to the neck, so that adhesions do not occur and then it is repositioned. The hernia sac is sutured, tied as high as possible and then cut (4).

Post-herniotomy pain is a physiological response to surgical wounds. Pain is defined as an unpleasant sensory and emotional experience that is associated with tissue damage or has the potential to cause tissue damage. Pain is the main reason a person seeks health care assistance. Therefore, pain can be overcome by carrying out pain management. Providing information on pain management is fundamental management of pain before and after surgery (1).

The deep breathing relaxation technique is a form of nursing care, in which the nurse teaches the client how to take deep breaths, slow breaths (holding inspiration to the maximum) and how to exhale slowly. Apart from reducing pain intensity, deep breathing relaxation techniques can also increase lung ventilation and increase blood oxygenation (4). Pain management with relaxation measures includes muscle relaxation, deep breathing, massage, meditation and behavior.

## Methods

The research concept used in this research is literature review. This concept is used to recognize "the effect of deep breathing relaxation techniques and massage on reducing the scale of pain in post-operative patients. The information used in this research is secondary information obtained from the results of research that has been attempted by previous researchers. (5). The aim was to explore the effect of deep breathing relaxation techniques and massage on reducing the pain scale in post-operative patients. Techniques used to find journals based on PICOT inclusion and exclusion criteria:

**Table 1.1 Techniques used to find journals based on PICOT inclusion and exclusion criteria**

Criteria	Inclusion	Exclusion
<i>Population</i>	Research journal that uses post-operative patient respondents	Research journals that do not use post-operative patient respondents
<i>Intervention</i>	Deep breathing and massage relaxation techniques	Apart from relaxation techniques, deep breathing and massage
<i>Comparison</i>	There isn't any	There isn't any
<i>Outcomes</i>	There is an influence of deep breathing relaxation techniques and massage on reducing the pain scale in post-operative patients	No influence
<i>Publication Years</i>	Journal published in 2010-2020	Journal published under 2010-2020

## Results

Searching in this Literature Review research uses onedatabase namely Google Scholar. The Literature Review search time was carried out in December 2023 – January 2024. The article search used the Google Scholar application after which the researcher entered keywords and Boolean operators (AND) which were used to expand or determine the search and which item or journal to use was easy to determine. All papers in national, worldwide publications with the key term "the effect of deep breathing relaxation techniques on reducing the pain scale" are the population and samples in this study

## Discussion

Determining inclusion and exclusion criteria in the finding method greatly influences the articles obtained. The results of 8 articles show that deep breathing relaxation techniques and massage influence the reduction in the patient's pain scale after surgery (3). Post-herniotomy pain is a physiological response to surgical wounds. Pain is defined as an unpleasant sensory and emotional experience that is associated with tissue damage or has the potential to cause tissue damage. Pain is the main reason a person seeks health care assistance.

Therefore, pain can be overcome by carrying out pain management. Providing information on pain management is fundamental management of pain before and after surgery (1).

Pain management with non-pharmacological techniques is the main capital towards comfort (3). Viewed from a cost and benefit perspective, the use of non-pharmacological management is more economical and has no side effects when compared to the use of pharmacological management. Apart from also reducing patient dependence on drugs (6). Apart from pharmacological treatment, another way is non-pharmacological pain management by using relaxation techniques, which are external actions that influence the individual's internal response to pain. Pain management with relaxation measures includes muscle relaxation, deep breathing, massage, meditation and behavior.

The deep breathing relaxation technique is a form of nursing care, in which the nurse teaches the client how to take deep breaths, slow breaths (holding inspiration to the maximum) and how to exhale slowly. Apart from reducing pain intensity, deep breathing relaxation techniques can also increase lung ventilation and increase blood oxygenation (4).

Based on research in 2000 conducted by Gregory P. Fortana, MD at Cedars – Sinai Medical Center Los Angeles, it was found that massage can reduce pain and muscle spasms in patients who have had multiple incisions (1). At the time of the survey 95% of patients felt that massage was an important part of their hospital experience, the need for medication to relieve pain was reduced as long as they received massage therapy. Massage is defined as the act of pressing with the hands on soft tissue, usually muscles, tendons or ligaments without causing a shift or change in joint position in order to reduce pain, produce relaxation, and/or increase circulation (7). Massage will be carried out on the upper back area to provide a comfortable effect on the patient, taking approximately 15 - 30 minutes.

The researcher chose the technique of deep breathing relaxation and massage for herniotomy patients on day 1 because mobilization could be carried out 6 hours after surgery, of course after the patient could move his body again after regional anesthesia. Post-operative patients undergo early mobilization step by step which is very useful to help the patient's healing progress. Mobilization has many benefits for increasing blood circulation which can

reduce pain, prevent thrombophlebitis, provide nutrition for wound healing, and improve smooth kidney function (7).

## Conclusion and Recommendations

Based on the literature review obtained, it was concluded that the deep breathing relaxation technique and massage carried out according to the rules had an effect in reducing the intensity of pain in post-herniotomy surgery patients and the more often post-herniotomy surgery patients underwent deep breathing relaxation and massage techniques, the lighter the degree of pain felt.

Based on the conclusions above, the suggestions that researchers can give are as follows: Deep breathing relaxation techniques and massage are recommended as non-pharmacological therapy techniques that can reduce pain in post-operative patients.

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